

coc# 226

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(425) 420-9200 (509) 924-9200 (503) 906-9200 FAX 906-9210 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: BRISTOL					INVO	ICE TO	:								TURN	NAROUND	REQU	EST in Busine	Business Days*				
PEDOPT TO: A AVAIL	Venni	1111+7	17	77	-		451		_								Organi		ganic Analyses				
REPORT TO: ANNE ADDRESS: ANCH!	PAMIL	TIVE	1	1											10	ال لار ك	4	3 2	1 <	1			
ADDRESS: AMCH	TCH, P	YK.			_											STD.			carbon Analyses				
PHONE: 907-770- PROJECT NAME: AM	0974	FAX:	10.	9	75	P.O. N	NUMBE	R: Z	109	0							4	3	2 1	< 1			
PROJECT NAME: ACC	HITKA						1	QUESTE	EDANA	LYSES						ST	Γ		lease Specify				
PROJECT NUMBER: 210	90	•			ta		C)78										OTH	ER					
SAMPLED BY:			1/\v	1200	30	6	لأحجا									*Turnar	ound Requests	less than st	andard may incur Ri	ish Charges.			
CLIENT SAMPLE	SAMPLI	NG	}&	付置	40	7	EOA COO									MATRIX	# OF			NC	A WO		
IDENTIFICATION	DATE/TII	ME	3	لخكا	4	2	(1)									(W, S, O)	CONT.		COMMENTS		ID		
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RELINQUISHED BY:	Mr Thray	1				DATE	: 811	tter	RECEI	IVED BY	(: 2 ~	1	1	10	<i>*</i>				I	DATE: 8/	11/01		
PRINT NAME: CAGACIA	Morshal	FIRM:	BRI	STO	7	TIME	: 146	10	PRINT	NAME:	nk	IN	40.	190	4	FIRM	NCI	2	7	пме: 🏒	225		
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ADDITIONAL REMARKS:																1			TEMP:		1		

ADDITIONAL REMARKS:

COC REV 3/99

MISC



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27 August, 2001

Anne Kranawetter Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are the results of analyses for samples received by the laboratory on 08/17/01 16:41. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jerry Orlando

Project Manager/QA

Work Orders included in this report:

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P1H0491



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
01AMC324MI	P1H0491-01	Other wet	08/11/01 14:20	08/17/01 16:41
01AMC325MI	P1H0491-02	Water	08/11/01 14:25	08/17/01 16:41



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported:

08/27/01 10:23

Diesel Range Organics (C10-C25) per AK102 North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet				S	sampled: 08/	11/01 Rece	ived: 08/17/	01	
Diesel Range Organics	16.6	0.250	mg/l	1	AK 102	08/20/01	08/21/01	1081515	A-01
Surr: 1-Chlorooctadecane	84.8 %	75-125			····				

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jerry Orlando, Project Manager/OA

North Creek Analytical, Inc. **Environmental Laboratory Network**

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Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet				5	Sampled: 08/1	1/01 Rece	ived: 08/17/	01	
Arsenic	ND	3.53	mg/kg	70.6	EPA 6020	08/20/01	08/21/01	1081541	
Barium	ND	1.00	11	20	"	11	08/20/01	1001541	
Cadmium	ND	1.00	n	n	n	II.	11	H .	
Chromium	ND	1.00	#1	**	11	n	11	11	
Lead	ND	1.00	n	"	11	Ħ	"	11	
Mercury	ND	0.00800	mg/l	1	EPA 7470A	08/20/01	08/20/01	1081519	R-03
Selenium	ND	1.00	mg/kg	20	EPA 6020	08/20/01	08/20/01	1081519	K-05
Silver	ND	1.00	11	"	11 11 0020	11	100/20/01	1001341	





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Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Glycols by GC/FID

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet					Sampled: 08/1	1/01 Rece	ived: 08/17/	01	R-05
Diethylene Glycol	ND	3000	mg/kg	100	EPA 8015m	08/20/01	08/20/01	1081512	R-03
Ethylene Glycol	91900	5000	"	1000	11	n	08/20/01	"	100
Propylene Glycol	ND	500	н	100	rr ·	**	08/20/01	11	
Surr: 1,2-Pentanediol	NR	50-150							S-01

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet					Sampled: 08/1	1/01 Recei	ived: 08/17/0	01	P-02
Acetone	ND	25000	ug/kg wet	1	EPA 8260B	08/20/01	08/23/01	1081513	
Benzene	ND	1000	11	n	**	11	11	"	
Bromobenzene	ND	1000	\$1	11	n	11	1T	n	
Bromochloromethane	ND	1000	11	"	n	11	ŧſ	n	
Bromodichloromethane	ND	1000	n ·	"	,	It	11	n	
Bromoform	ND	1000	n	**	rr ·	н	n	#	
Bromomethane	ND	5000	Ħ		11	n	н	**	
2-Butanone	ND	10000	17	11	"	n	п	11	
n-Butylbenzene	ND	5000	11			Ħ	11	**	
sec-Butylbenzene	ND	1000	**	Ħ		н	11	11	
tert-Butylbenzene	ND	1000	11	n	u,	н	11	ıı	
Carbon disulfide	ND	10000	11	n	11	11	11	11	
Carbon tetrachloride	ND	1000	11	n	n n	11	*1	fr .	
Chlorobenzene	ND	1000	11	н	**	11	"	11	
Chloroethane	ND	1000	11	H	**	11	11	11	
Chloroform	ND	1000	11	H	**	"		#1	
Chloromethane	ND	5000	11	н	Ħ	11	11	,,	
2-Chlorotoluene	ND	1000	11		17	"	*1	**	
4-Chlorotoluene	ND	1000	11	H		n	11	**	
1,2-Dibromo-3-chloropropane	ND	5000	н	,	n	11	11	11	
Dibromochloromethane	ND	1000	н	"	"	It	11	"	
1,2-Dibromoethane	ND	1000	н	Ħ	u	"	n	"	
Dibromomethane	ND	1000	ŧr	Ħ	n	н	. 11	**	
1,2-Dichlorobenzene	ND	1000	n	**	11	11	n	n	
1,3-Dichlorobenzene	ND	1000	17	n	11	n	n	11	
1,4-Dichlorobenzene	ND	1000	11	"	**	,,	n	"	
Dichlorodifluoromethane	ND	5000	11	п	11	n	#	n	
1,1-Dichloroethane	ND	1000	11	n	11	n	н	n	
1,2-Dichloroethane	ND	1000	п	"	11	11	Ħ	11	
1,1-Dichloroethene	ND	1000	11	11	11	11	71	n	
cis-1,2-Dichloroethene	ND	1000	н	11	н	11	11	"	
trans-1,2-Dichloroethene	ND	1000	n	11	ır	n	11	**	
1,2-Dichloropropane	ND	1000	#	11	11	n	**		
1,3-Dichloropropane	ND	1000	н	11	n	11	11	11	
2,2-Dichloropropane	ND	1000	11	11	**	11	11	11	
1,1-Dichloropropene	ND	1000	11	11	n		 H	"	
cis-1,3-Dichloropropene	ND	1000	*1	*	"	n	H	11	
trans-1,3-Dichloropropene	ND	1000	11		"	11	 H	 H	
Ethylbenzene	ND	1000	tt	в		11		,,	

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Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet					Sampled: 08/1	1/01 Recei	ived: 08/17/	01	P-02
Hexachlorobutadiene	ND	2000	ug/kg wet	1	EPA 8260B	08/20/01	08/23/01	1081513	
2-Hexanone	ND	10000	"	11	"	11	"	1001313	
Isopropylbenzene	ND	2000	Ħ	n	11	n	н		
p-Isopropyltoluene	ND	2000	11	11	11	n	11	#	
4-Methyl-2-pentanone	ND	5000	11	"	H	11	Ħ	H.	
Methyl tert-butyl ether	ND	1000	n	n	11	n	11	11	
Methylene chloride	ND	5000	**	n	11	11	11	**	
Naphthalene	ND	2000	· "	n	#	"	"	**	
n-Propylbenzene	ND	1000	11	#1	н	н	,	n	
Styrene	ND	1000	**	н	11	II	H	11	
1,1,1,2-Tetrachloroethane	ND	1000	IT	tt .	11	**	n	9	
1,1,2,2-Tetrachloroethane	ND	1000	tt .	n	**	n	n	11	
Tetrachloroethene	ND	1000	11*	11	"	R	11	It	
Toluene	ND	1000	11	n	Ħ	11	11	11	
1,2,3-Trichlorobenzene	ND	1000	n	**		и.		**	
1,2,4-Trichlorobenzene	ND	1000	. 11	**	"	*	н	11	
1,1,1-Trichloroethane	ND	1000	**	**	•	н	n	"	
1,1,2-Trichloroethane	ND	1000	n	n	II	ır	n	и	
Trichloroethene	ND	1000		11	11	11	n		
Trichlorofluoromethane	ND	1000	н	II	"	11	11	n	
1,2,3-Trichloropropane	ND	1000	"	11	11	11	n	11	
1,2,4-Trimethylbenzene	ND	1000	H	11	n	11	n	n	
1,3,5-Trimethylbenzene	ND	1000	u	n	IF.	11	**	11	
Vinyl chloride	ND	1000	IF	n	11	11	u	11	
o-Xylene	ND	1000	11	ıı	11	11	H	11	
m,p-Xylene	ND	2000	**	**	n	н	**	II	
Surr: 4-BFB	96.0 %	70-130	****						****
Surr: 1,2-DCA-d4	86.0 %	70-130							
Surr: Dibromofluoromethane	81.0 %	70-130							
Surr: Toluene-d8	96.5 %	70-130							

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC325MI (P1H0491-02) Water					Sampled: 08/1	1/01 Recei	ived: 08/17/0		
Acetone	ND	25.0	ug/l	1	EPA 8260B	08/20/01	08/20/01	1081511	
Benzene	ND	1.00	11	H	"	11	H	1001311	
Bromobenzene	ND	1.00	11	н	Ħ	11	**	n	
Bromochloromethane	ND	1.00	n	**	**	n	n	19	
Bromodichloromethane	ND	1.00	n		н	11	n n	H	
Bromoform	ND	1.00	11	15	, н	11	11	н	
Bromomethane	ND	5.00	11	11	11	*11	n	n	
2-Butanone	ND	10.0	11	11	n	n	H	"	
n-Butylbenzene	ND	5.00	"	11	H	n	19	**	
sec-Butylbenzene	ND	1.00	lt .	n	"	Ħ	11	11	
tert-Butylbenzene	ND	1.00	11	n	11	**	"		
Carbon disulfide	ND	10.0	11	11	n	**	,,	"	
Carbon tetrachloride	ND	1.00	**	**	n		"		
Chlorobenzene	ND	1.00	**	ŧſ	n	n	*	#	
Chloroethane	ND	1.00	17	n	n	**	"	#1	
Chloroform	ND	1.00	17	н	1t	"	11	n	
Chloromethane	ND	5.00	**	n	11	**	"	11	
2-Chlorotoluene	ND	1.00	11	H	**	11		n	
4-Chlorotoluene	ND	1.00	11	**	•	11	"	n	
1,2-Dibromo-3-chloropropane	ND	5.00	11	11	Ħ	Ħ	н	н	
Dibromochloromethane	ND	1.00	n	11	n	и .	,,	n	
1,2-Dibromoethane	ND	1.00	#	11	11	н	**	. "	
Dibromomethane	ND	1.00	ır	11	11	и :	**	n	
1,2-Dichlorobenzene	ND	1.00	11	Ħ	II	н	н	11	
1,3-Dichlorobenzene	ND	1.00	11	**	n	11	11	n	
1,4-Dichlorobenzene	ND	1.00	11	**	*1	11	**	n	
Dichlorodifluoromethane	ND	5.00	n	11	н	11	w	n	
1,1-Dichloroethane	ND	1.00	N	11	n	"		н	
1,2-Dichloroethane	ND	1.00	н	11	11	u	u	n	
1,1-Dichloroethene	ND	1.00	Ħ	**	п	"	**	н	
cis-1,2-Dichloroethene	ND	1.00	n	n	.11	11	11	н	
trans-1,2-Dichloroethene	ND	1.00	11	11	H	**	"	н	
1,2-Dichloropropane	ND	1.00		It	II	**	#	lt.	
1,3-Dichloropropane	ND	1.00	11	11	11			11	
2,2-Dichloropropane	ND	1.00	11	11	п	н	"	11	
1,1-Dichloropropene	ND	1.00	16	n	**	11	**	*1	
cis-1,3-Dichloropropene	ND	1.00	н	Ħ	n	11	11	н	
trans-1,3-Dichloropropene	ND	1.00	er	Ħ	**	11	11	11	
Ethylbenzene	ND	1.00	n	н	u	Ħ	11	n	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC325MI (P1H0491-02) Water					Sampled: 08/1	1/01 Recei	ived: 08/17/0	01	
Hexachlorobutadiene	ND	2.00	ug/l	1	EPA 8260B	08/20/01	08/20/01	1081511	
2-Hexanone	ND	10.0	n	n	п	11	11	n	
Isopropylbenzene	ND	2.00	*1	11	11	11	p	n	
p-Isopropyltoluene	ND	2.00	11	H	11	11	**	n	
4-Methyl-2-pentanone	ND	5.00	n	н	If	H			
Methyl tert-butyl ether	ND	1.00	Ħ	**	n	u	11	H .	
Methylene chloride	ND	5.00	Ħ	Ħ	n	11	11	u u	
Naphthalene	ND	2.00	II	"	n	H	**	н	
n-Propylbenzene	ND	1.00	II	n	н	"	11	н	
Styrene	ND	1.00	n	Ħ	tr .	**	11	п	
1,1,1,2-Tetrachloroethane	ND	1.00	IT	11	Ħ	H	tt	"	
1,1,2,2-Tetrachloroethane	ND	1.00	#	H	n	n	11	17	
Tetrachloroethene	ND	1.00	If	*1	. "	**	11	11	
Toluene	ND	1.00	Ħ	ŧ	н	n	11	**	
1,2,3-Trichlorobenzene	ND	1.00	Ħ	n	H	Ħ	91	и	
1,2,4-Trichlorobenzene	ND	1.00	n	**	и	n	tt	11	
1,1,1-Trichloroethane	ND	1.00	H	н	n	н	11	**	
1,1,2-Trichloroethane	ND	1.00	IT	Ħ	n	H	н	**	
Trichloroethene	ND	1.00	II .	Ħ	n	n	Ħ	11	
Trichlorofluoromethane	ND	1.00	18	11	tr.	**	n	н	
1,2,3-Trichloropropane	ND	1.00	11	**	11	11	Ħ	n	
1,2,4-Trimethylbenzene	ND	1.00	n	11	"	11	n	II.	
1,3,5-Trimethylbenzene	ND	1.00	"	n	H	11	ti	"	
Vinyl chloride	ND	1.00	n	н	n	11	n	11	
o-Xylene	ND	1.00	Ħ	**	n	#	Ħ	"	
m,p-Xylene	ND	2.00	**	11	11	11	н	n	
Surr: 4-BFB	103 %	75-125	-						
Surr: 1,2-DCA-d4	95.5 %	75-125							
Surr: Dibromofluoromethane	102 %	75-125							
Surr: Toluene-d8	105 %	75-125							

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Physical Parameters per APHA/ASTM/EPA Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC324MI (P1H0491-01) Other wet				S	Sampled: 08/1	1/01 Recei	ved: 08/17/0	01	
Flashpoint	ND	150	°F	1	EPA 1010	08/20/01	08/20/01	1081556	

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported:

08/27/01 10:23

Diesel Range Organics (C10-C25) per AK102 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1081515 - EPA 3510 Fuels										
Blank (1081515-BLK1)				Prepare	d: 08/20/0	1 Analyz	ed: 08/21/0	01	· . · . · . · . · . · . · . · . · . · .	<u></u>
Diesel Range Organics	ND	0.250	mg/l							
Surr: 1-Chlorooctadecane	0.0798		"	0.0960	····	83.1	75-125			
LCS (1081515-BS1)		-		Prepare	d: 08/20/0	1 Analyz	ed: 08/21/0	01		
Diesel Range Organics	2.19	0.250	mg/l	2.58		84.9	75-125			· · · · · · · · · · · · · · · · · · ·
Surr: 1-Chlorooctadecane	0.0782		"	0.0960		81.5	75-125			

LCS	Dup	(1081515-BSD1)

LCS Dup (1081515-BSD1)		Prepared: 08/20/01 Analyzed: 08/21/01										
Diesel Range Organics	2.11	0.250	mg/l	2.58	81.8	75-125	3.72	20				
Surr: 1-Chlorooctadecane	0.0777		"	0.0960	80.9	75-125						

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Reported: Project Manager: Anne Kranawetter 08/27/01 10:23

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland												
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes		
Batch 1081519 - EPA 7470												
Blank (1081519-BLK1)				Prepare	d & Analy	zed: 08/20	0/01					
Mercury	ND	0.000200	mg/l									
LCS (1081519-BS1)				Prepare	d & Analy	zed: 08/20	0/01					
Mercury	0.00502	0.000200	mg/l	0.00500		100	80-120					
Duplicate (1081519-DUP1)	Soi	urce: P1G08	22-01	Prepare	d & Analy	zed: 08/20	0/01					
Mercury	ND	0.000200	mg/l		ND				20			
Matrix Spike (1081519-MS1)	Soi	urce: P1G082	22-01	Prepare	d & Analy	zed: 08/20	0/01					
Mercury	0.00479	0.000200	mg/i	0.00500	ND	95.8	75-125					
Matrix Spike (1081519-MS2)	Sou	urce: P1H02	44-06	Prepare	d & Analy	zed: 08/20	0/01					
Mercury	0.00486	0.000200	mg/l	0.00500	ND	97.2	75-125					
Batch 1081541 - EPA 3010												
Blank (1081541-BLK1)				Prepare	d: 08/20/0	1 Analyz	ed: 08/21/0)1				
Arsenic	ND	0.0200	mg/kg									
Barium	ND	0.0200	n									
Cadmium	ND	0.0200	n									
Chromium	ND	0.0200	Ħ									
Lead	ND	0.0200	ŧ									
Selenium	ND	0.0200	n									
Silver	ND	0.0200	н									
LCS (1081541-BS1)				Prepare	d: 08/20/0	1 Analyz	ed: 08/21/0)1				
Arsenic	0.184	0.0200	mg/kg	0.200		92.0	80-120					
Barium	0.221	0.0200	IT	0.200		110	80-120					
Cadmium	0.226	0.0200	11	0.200		113	80-120					
Chromium	0.233	0.0200	n	0.200		116	80-120					
Lead	0.230	0.0200	n	0.200		115	80-120					
Selenium	0.227	0.0200	m	0.200		114	80-120					
Silver	0.105	0.0200	Ħ	0.100		105	80-120					

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Total Metals per EPA 6000/7000 Series Methods - Quality Control

North	Creek	Analytical -	Portland

A == 1= 4=		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch	1()815	541 -	EPA	3010
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Selenium

Silver

Duplicate (1081541-DUP1)	Source	e: P1H04	91-01	Prepare	d: 08/20/0	1 Analyz	zed: 08/21/0)1	
Arsenic	ND	1.00	mg/kg		ND				20
Barium	ND	1.00	"		ND				20
Cadmium	ND	1.00	rr rr		ND				20
Chromium	ND	1.00	**		ND				20
Lead	ND	1.00	11		ND			15.4	20
Selenium	ND	1.00	11		ND				20
Silver	ND	1.00	"		ND				20
Matrix Spike (1081541-MS1)	Sourc	e: P1H04	91-01	Prepare	d & Analy	zed: 08/2	20/01		
Arsenic	10.7	1.00	mg/kg	10.0	ND	107	75-125		-·····································
Barium	10.6	1.00	11	10.0	ND	106	75-125		
Cadmium	10.7	1.00	**	10.0	ND	107	75-125		
Chromium	10.8	1.00	,,	10.0	ND	108	75-125		
Lead	11.0	1.00	11	10.0	ND	109	75-125		

10.0

5.00

ND

ND

93.6

98.6

75-125

75-125

9.36

4.93

1.00

1.00

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Glycols by GC/FID - Quality Control

0.00

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1081512 - GC Semivolatiles										····
Blank (1081512-BLK1)				Prenare	d & Analy	zed: 08/2	0/01	-	· · · · · · · · · · · · · · · · · · ·	
Diethylene Glycol	ND	5.00	mg/kg		<u> </u>	200. 00/2	0/01			
Ethylene Glycol	ND	5.00	"							
Propylene Glycol	ND	5.00	n							
Surr: 1,2-Pentanediol	88.2		"	100		88.2	50-150			
LCS (1081512-BS1)				Prepare	d & Analy	zed: 08/2	0/01			
Diethylene Glycol	206	5.00	mg/kg	200		103	50-150	11.7		·
Ethylene Glycol	210	5.00	n	200		105	50-150			
Propylene Glycol	205	5.00	n	200		102	50-150			
Surr: 1,2-Pentanediol	92.4		"	100		92.4	50-150			
Duplicate (1081512-DUP1)	So	urce: P1H049	91-01	Prepare	d & Analy	zed: 08/2	0/01			
Diethylene Glycol	ND	3000	mg/kg		ND				200	R-03
Ethylene Glycol	99100	5000	n		91900			7.54	200	00
Propylene Glycol	ND	500	ır		ND				200	

100

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Surr: 1,2-Pentanediol

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

1										
Angleso		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

	Batch	1	081	511	- EPA	5030B
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Blank (1081511-BLK1)				Prepared & Analyzed: 08/20/01
Acetone	ND	25.0	ug/l	
Benzene	ND	1.00	"	
Bromobenzene	ND	1.00	"	
Bromochloromethane	ND	1.00	tt	
Bromodichloromethane	ND	1.00	**	
Bromoform	ND	1.00	**	
Bromomethane	ND	5.00	17	
2-Butanone	ND	10.0	n	
n-Butylbenzene	ND	5.00	tt.	
sec-Butylbenzene	ND	1.00	"	
tert-Butylbenzene	ND	1.00	"	
Carbon disulfide	ND	10.0	"	
Carbon tetrachloride	ND	1.00	**	
Chlorobenzene	ND	1.00	"	
Chloroethane	ND	1.00	"	
Chloroform	ND	1.00	**	
Chloromethane	ND	5.00	"	
2-Chlorotoluene	ND	1.00	"	
4-Chlorotoluene	ND	1.00	11	
1,2-Dibromo-3-chloropropane	ND	5.00	10 1	
Dibromochloromethane	ND	1.00	11	
1,2-Dibromoethane	ND	1.00	11	
Dibromomethane	ND	1.00	tt	
1,2-Dichlorobenzene	ND	1.00	п	
1,3-Dichlorobenzene	ND	1.00	н	
1,4-Dichlorobenzene	ND	1.00	11	
Dichlorodifluoromethane	ND	5.00	Ħ	
1,1-Dichloroethane	ND	1.00	н	
1,2-Dichloroethane	ND	1.00	Ħ	
1,1-Dichloroethene	ND	1.00	11	
cis-1,2-Dichloroethene	ND	1.00	"	
trans-1,2-Dichloroethene	ND	1.00	n	
1,2-Dichloropropane	ND	1.00	11	
1,3-Dichloropropane	ND	1.00	11	
2,2-Dichloropropane	ND	1.00	11	
1,1-Dichloropropene	ND	1.00	11	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

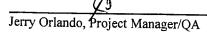
North Creek Analytical - Portland

Analyta		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch	1081	511 -	EPA	5030B

Blank (1081511-BLK1)				Prepared & Analyzed: 08/20/01
cis-1,3-Dichloropropene	ND	1.00	ug/l	33-5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
rans-1,3-Dichloropropene	ND	1.00	n	
Ethylbenzene	ND	1.00	Ħ	
Hexachlorobutadiene	ND	2.00	п	
2-Hexanone	ND	10.0	н	
sopropylbenzene	ND	2.00	н	
o-lsopropyltoluene	ND	2.00	8	
l-Methyl-2-pentanone	ND	5.00	"	
Methyl tert-butyl ether	ND	1.00	11	
Methylene chloride	ND	5.00	**	
Naphthalene	ND	2.00	11	
-Propylbenzene	ND	1.00	11	
Styrene	ND	1.00	и	
,1,1,2-Tetrachloroethane	ND	1.00	Ħ	
,1,2,2-Tetrachloroethane	ND	1.00	19	
etrachloroethene	ND	1.00	it	
oluene	ND	1.00	н	
,2,3-Trichlorobenzene	ND	1.00	11	
,2,4-Trichlorobenzene	ND	1.00	n	
,1,1-Trichloroethane	ND	1.00	n	
,1,2-Trichloroethane	ND	1.00	π	
richloroethene	ND	1.00	Ħ	
richlorofluoromethane	ND	1.00	n	
,2,3-Trichloropropane	ND	1.00	Ħ	
,2,4-Trimethylbenzene	ND	1.00	n	
,3,5-Trimethylbenzene	ND	1.00	Ħ	
/inyl chloride	ND	1.00	н	
-Xylene	ND	1.00	н	
n,p-Xylene	ND	2.00	n	
Surr: 4-BFB	20.9		#	20.0 104 75-125
Surr: 1,2-DCA-d4	19.0		"	20.0 95.0 75-125
Surr: Dibromofluoromethane	19.8		"	20.0 99.0 75-125
Surr: Toluene-d8	20.4		"	20.0 102 75-125

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

	Nor	th Creek	Analy	tical - P	ortland				<u> </u>	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1081511 - EPA 5030B							· · · · · · · · · · · · · · · · · · ·			
LCS (1081511-BS1)				Prepare	d & Analy	zed: 08/20	0/01			
Benzene	16.4	1.00	ug/l	20.0		82.0	80-125			
Chlorobenzene	16.3	1.00	"	20.0		81.5	80-125			
1,1-Dichloroethene	15.1	1.00	n	20.0		75.5	70-135			
Toluene	16.2	1.00	11	20.0		81.0	80-125			
Trichloroethene	17.1	1.00	17	20.0		85.5	70-130			
Surr: 4-BFB	20.0		"	20.0		100	75-125			
Surr: 1,2-DCA-d4	18.6		"	20.0		93.0	75-125			
Surr: Dibromofluoromethane	<i>20.1</i>		"	20.0		100	75-125			
Surr: Toluene-d8	20.6		"	20.0		103	75-125			
Matrix Spike (1081511-MS1)	Sou	rce: P1H040	68-01	Prepare	d & Analy	zed: 08/20				
Benzene	19.6	1.00	ug/l	20.0	ND	98.0	80-125			
Chlorobenzene	18.4	1.00	"	20.0	ND	92.0	80-125			
,1-Dichloroethene	19.7	1.00	*1	20,0	ND	98.5	70-135			
Toluene	18.8	1.00	n	20.0	ND	92.2	80-125			
Trichloroethene	19.2	1.00	п	20.0	ND	96.0	70-130			
Surr: 4-BFB	20.0		11	20.0		100	75-125			
Surr: 1,2-DCA-d4	18.9		n	20.0		94.5	75-125			
Surr: Dibromofluoromethane	20.0		"	20.0		100	75-125			
Surr: Toluene-d8	20.2		"	20.0		101	75-125			
Matrix Spike Dup (1081511-MSD1)	Sou	ırce: P1H040	68-01	Prepare	d & Analy	zed: 08/20	0/01			
Benzene	19.9	1.00	ug/l	20.0	ND	99.5	80-125	1.52	25	
Chlorobenzene	18.7	1.00	11	20.0	ND	93.5	80-125	1.62	25	
,1-Dichloroethene	19.6	1.00	11	20.0	ND	98.0	70-135	0.509	25	
Toluene	18.9	1.00	**	20.0	ND	92.6	80-125	0.531	25	
Trichloroethene	19.1	1.00	17	20.0	ND	95.5	70-130	0.522	25	
Surr: 4-BFB	20.5		**	20.0		102	75-125			
Surr: 1,2-DCA-d4	19.2		"	20.0		96.0	75-125			
Surr: Dibromofluoromethane	20.6		"	20.0		103	75-125			
0 77 1 10										

20.0

20.7

North Creek Analytical - Portland

Surr: Toluene-d8

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported:

08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte		Reporting		Spike	Source		%REC		RPD	
Allalyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch	1081513	- EPA	5035
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Blank (1081513-BLK1)				Prepared: 08/20/01 Analyzed: 08/23/01	
Acetone	ND	2500	ug/kg	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Benzene	ND	100	n		
Bromobenzene	ND	100	11		
Bromochloromethane	ND	100	11		
Bromodichloromethane	ND	100	11		
Bromoform	ND	100	11		
Bromomethane	ND	500	n		
2-Butanone	ND	1000	"		
n-Butylbenzene	ND	500	n		
sec-Butylbenzene	ND	100	er		
tert-Butylbenzene	ND	100	Ħ		
Carbon disulfide	ND	1000	Ħ		
Carbon tetrachloride	ND	100	11		
Chlorobenzene	ND	100	H.		
Chloroethane	ND	100	II		
Chloroform	ND	100	н		
Chloromethane	ND	500	#		
2-Chlorotoluene	ND	100	Ħ		
4-Chlorotoluene	ND	100	Ħ		
1,2-Dibromo-3-chloropropane	ND	500	II		
Dibromochloromethane	ND	100	Ħ		
1,2-Dibromoethane	ND	100	U		
Dibromomethane	ND	100	n		
1,2-Dichlorobenzene	ND	100	11		
1,3-Dichlorobenzene	ND	100	**		
1,4-Dichlorobenzene	ND	100	11		
Dichlorodifluoromethane	ND	500	Ħ		
1,1-Dichloroethane	ND	100	IF		
1,2-Dichloroethane	ND	100	11		
1,1-Dichloroethene	ND	100	II		
cis-1,2-Dichloroethene	ND	100	**		
trans-1,2-Dichloroethene	ND	100	ti		
1,2-Dichloropropane	ND	100	"		
1,3-Dichloropropane	ND	100	n		
2,2-Dichloropropane	ND	100	"		
1,1-Dichloropropene	ND	100	II .		

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

A = 1.4-		Reporting		Spike	Source		%REC		RPD	- 1
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1081513 - EPA 5035				
Blank (1081513-BLK1)				Prepared: 08/20/01 Analyzed: 08/23/01
cis-1,3-Dichloropropene	ND	100	ug/kg	
trans-1,3-Dichloropropene	ND	100	9	
Ethylbenzene	ND	100	H	
Hexachlorobutadiene	ND	200	11	
2-Hexanone	ND	1000	n	
sopropylbenzene	ND	200	*1	
o-Isopropyltoluene	ND	200	11	
-Methyl-2-pentanone	ND	500	**	
Methyl tert-butyl ether	. ND	100	"	
Methylene chloride	ND	500	n	
Naphthalene	ND	200	IT	
n-Propylbenzene	ND	100	n	
Styrene	ND	100	н	
,1,1,2-Tetrachloroethane	ND	100	Ħ	
,1,2,2-Tetrachloroethane	ND	100	**	
etrachloroethene	ND	100	H	
Coluene	ND	100	Ħ	
,2,3-Trichlorobenzene	ND	100	11	
,2,4-Trichlorobenzene	ND	100	н	
,1,1-Trichloroethane	ND	100	н	
,1,2-Trichloroethane	ND	100	11	
Trichloroethene	ND	100	11	
richlorofluoromethane	ND	100	"	
,2,3-Trichloropropane	ND	100	11	
,2,4-Trimethylbenzene	ND	100	**	
,3,5-Trimethylbenzene	ND	100	н	
Vinyl chloride	ND	100	11	
-Xylene	ND	100	**	
n,p-Xylene	ND	200	11	
Surr: 4-BFB	2400		"	2000 120 70-130
Surr: 1,2-DCA-d4	2170		H	2000 108 70-130
Surr: Dibromofluoromethane	2030		"	2000 102 70-130
Surr: Toluene-d8	2410		"	2000 120 70-130

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jerry Orlando, Project Manager/QA

North Creek Analytical, Inc. **Environmental Laboratory Network**

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Volatile Organic Compounds per EPA Method 8260B - Quality Control

	Noi	rth Creek	Analyti	ical - P	ortland					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1081513 - EPA 5035										
LCS (1081513-BS1)				Prepare	d: 08/20/0	1 Analyz	ed: 08/23/	01		
Benzene	2160	100	ug/kg	2500		86.4	80-135			7-8-0
Chlorobenzene	2080	100	"	2500		83.2	80-135			
1,1-Dichloroethene	1780	100	n	2500		71.2	60-150			
Toluene	2260	100	n	2500		90.4	80-130			
Trichloroethene	2000	100	n .	2500		80.0	70-135			
Surr: 4-BFB	2190	717.V.	"	2000		110	70-130			
Surr: 1,2-DCA-d4	1960		"	2000		98.0	70-130			
Surr: Dibromofluoromethane	1810		"	2000		90.5	70-130			
Surr: Toluene-d8	2150		"	2000		108	70-130			
Matrix Spike (1081513-MS1)	So	urce: P1H04	165-25	Prepared: 08/20/01 Analyzed: 08/2			ed: 08/23/	01		
Benzene	2110	100		2880	ND	73.3	60-135			
Chlorobenzene	2220	100	"	2880	ND	77.1	65-125			
1,1-Dichloroethene	1530	100	11	2880	ND	53.1	60-135			Q-01
Toluene	2240	100	"	2880	ND	77.3	60-125			
Trichloroethene	1870	100	"	2880	ND	64.9	60-125			
Surr: 4-BFB	2410		"	2300		105	70-130		~	
Surr: 1,2-DCA-d4	2110		#	2300		91.7	70-130			
Surr: Dibromofluoromethane	2060		n	2300		89.6	70-130			
Surr: Toluene-d8	2400		"	2300		104	70-130			
Matrix Spike Dup (1081513-MSD1)	So	urce: P1H04	165-25	Prepare	:d: 08/20/0)1 Analyz	ed: 08/23/	01		
Benzene	2110	100	ug/kg dry	2880	ND	73.3	60-135	0.00	25	
Chlorobenzene	2210	100	n	2880	ND	76.7	65-125	0.451	25	
1,1-Dichloroethene	1450	100	11	2880	ND	50.3	60-135	5.37	25	Q-01
Toluene	2270	100	Ħ	2880	ND	78.4	60-125	1.33	25	•
Trichloroethene	1930	100	Ħ	2880	ND	67.0	60-125	3.16	25	
Surr: 4-BFB	2360		"	2300		103	70-130			
Surr: 1,2-DCA-d4	2050		н	2300		<i>89.1</i>	70-130			
Surr: Dibromofluoromethane	2010		"	2300		87.4	70-130			
Surr: Toluene-d8	2350		"	2300		102	70-130			

North Creek Analytical - Portland

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Jerry Orlando, Project Manager/QA



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported:

08/27/01 10:23

Physical Parameters per APHA/ASTM/EPA Methods - Quality Control

North Creek Analytical - Portland

Reporting Spike Source %REC RPD Analyte Result Limit Units Level Result %REC Limits RPD Limit Notes

Batch 1081556 - EPA 1010

Duplicate (1081556-DUP1) Source: P1H0491-01 Prepared & Analyzed: 08/20/01 Flashpoint ND 150 ND 50

North Creek Analytical - Portland

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North Creek Analytical, Inc. **Environmental Laboratory Network**

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Kranawetter

Reported: 08/27/01 10:23

Notes and Definitions

A-01	Detected hydrocarbons do not have a distinct pattern and appear to be due to biogenic interference; however there appears to some weathered diesel, cleanup recommended.
P-02	Results reported on 'As Received' basis.
Q-01	The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
R-03	The reporting limit for this analyte was raised due to matrix interference.
R-05	Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)

Relative Percent Difference

RPD